FREIGHT NEWS

Freight Transportation Profile—California Freight Analysis Framework

Understanding future freight activity is important for matching infrastructure supply to demand and for assessing potential investment and operational strategies. To help decisionmakers identify areas in need of capacity improvements, the U.S. Department of Transportation developed the Freight Analysis Framework (FAF), a comprehensive national database and analysis tool that examines freight flows for the truck, rail, water, and air modes. FAF also forecasts freight activity in 2010 and 2020 for each of these modes. Information about the methodology used in developing FAF is available on the Office of Freight Management and Operations' website www.ops.fhwa.dot.gov/freight.

The U.S. freight transportation network moves a staggering volume of goods each year. Over 15 billion tons of goods, worth over $9 trillion, were moved in 1998. The movement of bulk goods, such as grains, coal, and ores, still comprises a large share of the tonnage moved on the U.S. freight network. However, lighter and more valuable goods, such as computers and office equipment, now make up an increasing proportion of what is moved. FAF estimates that trucks carried about 71 percent of the total tonnage and 80 percent of the total value of U.S. shipments in 1998. By 2020, the U.S. transportation system is expected to handle about 23 billion tons of cargo valued at nearly $30 trillion.

California

Table 1 presents information on freight shipments that have either an origin or a destination in California. As shown in the table, trucks moved a large percentage of the tonnage and value of shipments, followed by rail by tonnage and air by value. Figures 1 and 2 show freight flows on the highway and rail modes.

Truck traffic is expected to grow throughout the state over the next 20 years. Much of the growth will occur in urban areas and on the Interstate highway system (Figures 3 and 4). Truck traffic moving to and from California accounted for 12 percent of the average annual daily truck traffic (AADTT) on the FAF road network. Nearly 32 percent of truck traffic involved in-state shipments, and 2 percent involved trucks traveling across the state to other markets. Approximately 54 percent of the AADTT were not identified with a route-specific origin or destination.

Table 2 shows the top five commodity groups shipped to, from, and within California by all modes. The top commodities by weight are crude petroleum or natural gas and petroleum or coal products. By value, the top commodities are transportation equipment and food or kindred products.

Table 1. Freight Shipments To, From, and Within California: 1998, 2010, and 2020

CALIFORNIA	Tons (millions)			Value (billions $)		
	1998	2010	2020	1998	2010	2020
State Total	1,360	1,980	2,435	1,218	2,564	4,315
By Mode						
Air	4	7	11	220	522	945
Highway	1,108	1,626	1,988	900	1,866	3,093
Other[a]	37	51	60	5	10	15
Rail	150	230	298	80	147	233
Water	62	65	78	13	19	29
By Destination/Market						
Domestic	1,231	1,750	2,105	956	1,940	3,130
International	130	230	329	262	624	1,184

Note: Modal numbers may not add to totals due to rounding.

[a] The "Other" category includes international shipments that moved via pipeline or by an unspecified mode.

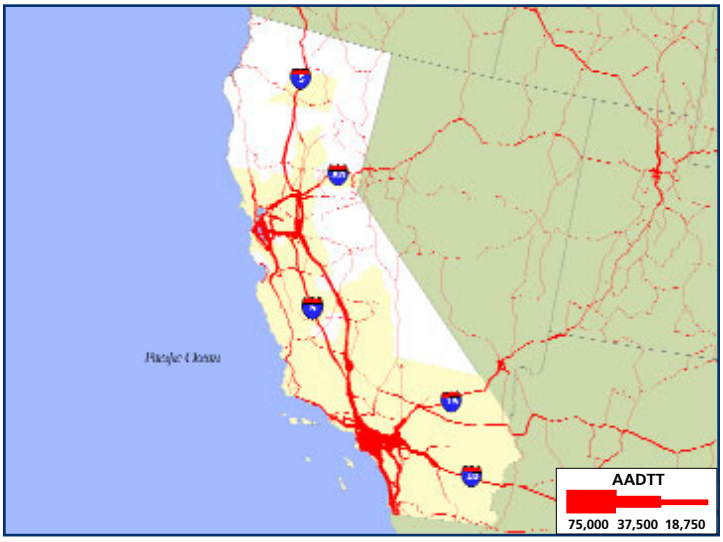
Figure 1. Freight Flows To, From, and Within California by Truck: 1998 (tons)

Federal Highway Administration

Figure 2. Freight Flows To, From, and Within California by Rail: 1998 (tons)

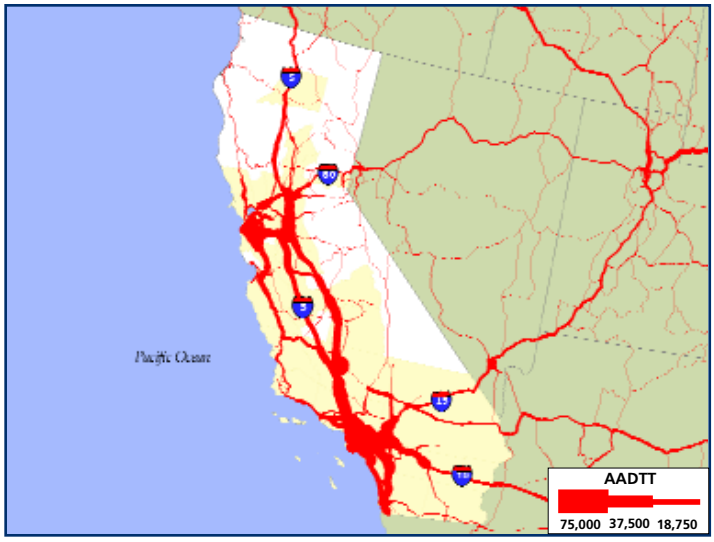
Federal Railroad Administration

Figure 3. Estimated Average Annual Daily Truck Traffic: 1998



Federal Highway Administration

Figure 4. Estimated Average Annual Daily Truck Traffic: 2020



Federal Highway Administration

Table 2. Top Five Commodities Shipped To, From, and Within California by All Modes: 1998 and 2020

Commodity	Tons (millions)		Commodity	Value (billions $)	
	1998	2020		1998	2020
Crude Petroleum/Natural Gas	375	420	Transportation Equipment	158	385
Petroleum/Coal Products	132	289	Food/Kindred Products	124	440
Nonmetallic Minerals	129	286	Machinery	113	432
Chemicals/Allied Products	101	206	Secondary Traffic[a]	89	354
Food/Kindred Products	90	125	Instr/Photo Equip/Optical Equip	85	398

[a] Secondary traffic is defined as freight flows to and from distribution centers or through intermodal facilities. No commodities are assigned to this intermediate step in the transportation process.

For More Information, Please Contact
Bruce Lambert
Office of Freight Management and Operations
Federal Highway Administration
202-366-4241
bruce.lambert@fhwa.dot.gov

November 2002
FHWA-OP-03-022
EDL 13710

A series of FAF products are available on the website noted below. FAF outputs include freight flow maps for states, modes, and gateways; detailed databases on traffic flows and commodity movements; information on the methodologies used to develop FAF; and forecast assumptions.

The U.S. Department of Transportation, Bureau of Transportation Statistics (BTS) is also developing a series of state transportation profiles. For more information and to obtain a copy of the BTS reports, please call 202-366-DATA.

U.S. Department of Transportation

Federal Highway Administration